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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/525,105	03/14/2000	Donald C. Abbott	TI-28098	9089

7590 06/17/2003

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EXAMINER
WILLIAMS, ALEXANDER O

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/525,105	Applicant(s) ABBOTT ET AL.	
	Examiner Alexander O Williams	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 23-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 23-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Serial Number: 09/525105 Attorney's Docket #: TI-28098
Filing Date: 3/14/00; claimed foreign priority to 3/19/99

Applicant: Abbott et al.

Examiner: Alexander Williams

Applicant's Amendment in Paper # 18, filed 3/25/03, has been acknowledged.

Claims 14 to 22 have been canceled.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the

differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CAR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1 is rejected under 35 U.S.C. § 102(e) as being anticipated by Lee et al. (U.S. Patent # 6,232,651 B1).

For example, in claim 1, Lee et al. **(Figures 5 and 6)** specifically figure 6 show a leadframe **34** for use with packaged integrated circuit chips **40** comprising: gold **36** selectively plated on segments of said leadframe intended for solder **(see column 2, lines 25-39).**

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Hashizume (U.S. Patent # 5,946,556).

For example, in claim 1, Hashizume **(Figures 3 to 5F)** specifically figure 4 show a leadframe **4** for use with packaged **1** integrated circuit chips **5** comprising: gold selectively plated on segments of said leadframe intended for solder attachment. **(see column 10, lines 26-34,(iii)).**

Initially, and with respect to claims 2, 11 and 13, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

Claims 2 to 13, 15 and 23 to 26. insofar as claims 25 and 26 can be understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Abbott (U.S. Patent # 6,245,448) in view of Akino et al. (Japan Patent Application # 2000-77593) and further in view of Lee et al. (U.S. Patent # 6,232,651 B1).

In claim 2 and similar claim 11, Abbott **(Figures 1 to 3)** particularly figure 3 show a leadframe **34** for use with integrated circuit chips **12**, having a chip mount pad **14** and a plurality of lead segments, comprising: a leadframe base **28** of copper or copper alloy; a first layer **36** of nickel deposited on said copper; a layer of alloy **38** of nickel and palladium on first nickel layer; a second nickel layer **40**; a layer of palladium **42**. Abbott fails to explicitly show gold selectively plated on segments of said leadframe intended for solder attachment.

Akino et al. is cited for showing a lead frame for semiconductor. Specifically, Akino et al. **(figures 1 to 3)**

specifically figure 3 discloses a leadframe **1** base made of copper **5**; a first layer of nickel **6** deposited on said copper; a palladium **7** on first nickel layer; a second nickel layer **9**; a layer of palladium **7**; and a layer of gold **8** for the purpose of improving the structure of plating layers solderability after heating.

Lee et al. is cited for showing a lead frame for a semiconductor device. Specifically, Lee et al. **(Figures 5 and 6)** specifically figure 6 show a leadframe **34** for use with packaged integrated circuit chips **40** comprising: gold **36** selectively plated on segments of said leadframe for the purpose of solder attachment.

In claim 3 to 8 and 24 to 26, Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

As to claims 9 to 15, using the combination of Abbott, Akino et al. and Lee et al., it would be obvious to one of ordinary skill in the art to use claimed detailed on the structure of the leadframe in the device.

Therefore, it would have been obvious to one of ordinary skill in the art to use Lee et al.'s gold selectively covering segments of said leadframe external to said package to modify Akino et al.'s gold layer to be used in Abbott's device for the purpose of improving the structure of plating layers solderability after heating and solder attachments.

As to the grounds of rejection under section 103, see MPEP § 2113.

Claims 2 to 13, 15 and 23 to 26, insofar as claims 25 and 26 can be understood, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Abbott (U.S. Patent # 6,245,448) in view of Akino et al. (Japan Patent Application # 2000-77593) and further in view of Hashizume (U.S. Patent # 5,946,556).

In claim 2 and similar claim 11, Abbott **(Figures 1 to 3)** particularly figure 3 show a leadframe **34** for use with integrated circuit chips **12**, having a chip mount pad **14** and a plurality of lead segments, comprising: a leadframe base **28** of copper or copper alloy; a first layer **36** of nickel deposited on said copper; a layer of alloy **38** of nickel and palladium on first nickel layer; a second nickel layer **40**; a layer of palladium **42**. Abbott fails to explicitly show gold selectively plated on segments of said leadframe intended for solder attachment.

Akino et al. is cited for showing a lead frame for semiconductor. Specifically, Akino et al. **(figures 1 to 3) specifically figure 3** discloses a leadframe **1** base made of copper **5**; a first layer of nickel **6** deposited on said copper; a palladium **7** on first nickel layer; a second nickel layer **9**; a layer of palladium **7**; and a layer of gold **8** for the purpose of improving the structure of plating layers solderability after heating.

Hashizume is cited for showing a plastic packaged semiconductor device. Specifically, Hashizume **(Figures 3 to 5F)** specifically figure 4 show a leadframe **4** for use with packaged **1** integrated circuit chips **5** comprising: a plated layer **(see column 10, lines 26-34)** gold selectively plated on segments of said leadframe **(see column 10, lines 31-34, (iii))** for the purpose of solder attachment.

In claim 3 to 8 and 24 to 26, Note that the specification contains no disclosure of either the critical nature of the

claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

As to claims 9 to 13 and 15, using the combination of Abbott, Akino et al. and Hashizume, it would be obvious to one of ordinary skill in the art to use claimed detailed on the structure of the leadframe in the device.

Therefore, it would have been obvious to one of ordinary skill in the art to use Hashizume's gold selectively covering segments of said leadframe external to said package to modify Akino et al.'s gold layer to be used in Abbott's device for the

Response

Applicant's arguments filed 3/25/03 have been fully considered, but are moot in view of the new and modified grounds of rejections detailed above. In the examination of the claims the Examiner is interested in finding the final structure of the claim language.

Applicant's statement that "Lee notes that use of a thin gold layer increase production costs and provided "bad" adhesiveness to mold resin. These statements in Lee are clear indications that Lee is not selectively plating gold on segments of the leadframe intended for solder attachment, but is rather the plating of gold extensively over the external leads, and is therefore teaching away from the claim invention" are not found to be persuasive. Lee does state that "In an example of still another conventional lead frame, a gold thin layer can be formed on part of the external leads ..... Furthermore, the gold thin layer forms Au-Sn together with tin (Sn) of a solder." Therefore, Lee teaches gold selectively plated on segments of said leadframe in which can be intended for solder attachment.

Applicant's statement that "Hashizune does not state whether the entire leadframe is covered with the gold or silver layer, but it is clear that the gold or silver id not selective to segments of the leadframe intended for solder attachment" is not found to be persuasive. Applicant's claim does not claim that the entire leadframe need to be covered with the gold or silver layer, so was not be to examiner. Hahizume does state that "the lead fingers are plated with a metal such as gold(au) or silver (Ag)..... and (iii) **improving the wettability of a solder to the lead fingers** in a subsequent mounting process of the semiconductor device 1 onto a printed circuit board (PCB) (not shown)." Therefore, Hashizune teaches gold selectively plated on segments of said leadframe in which can be intended for solder attachment.

The arguments presented have been carefully considered, but are not persuasive that the rejection of the claim under the rejections shown above should be withdrawn.

In response to applicant's argument that "gold selectively plated on segments of said leadframe intended for solder attachment", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Field of Search	Date
U.S. Class and subclass: 257/666,675-678,690,692,693,696,698, 712,713,762,741,766-768,772,779,784,788	3/23/01 4/14/02 6/25/02 12/15/02 6/13/03
Other Documentation: foreign patents and literature in 257/666,675-678,690,692,693,696,698, 712,713,762,741,766-768,772,779,784,788	3/23/01 4/14/02 6/25/02 12/15/02 6/13/03
Electronic data base(s): U.S. Patents EAST	3/23/01 4/14/02 6/25/02 12/15/02 6/13/03

Papers related to this application may be submitted to Technology Center 2800 by facsimile transmission. Papers should be faxed to Technology Center 2800 via the Technology Center 2800 Fax center located in Crystal Plaza 4-5B15. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center 2800 Fax Center number is (703) 308-7722 or 24. Only Papers related to Technology Center 2800 APPLICATIONS SHOULD BE FAXED to the GROUP 2800 FAX CENTER.

Any inquiry concerning this communication or any earlier communication from the examiner should be directed to ***Examiner Alexander Williams*** whose telephone number is **(703) 308-4863.**

Any inquiry of a general nature or relating to the status of this application should be directed to the ***Technology Center 2800 receptionist*** whose telephone number is **(703) 308-0956.**

6/13/03

Primary Patent Examiner
Alexander O. Williams